Assessing the Effects of Family Leave Policy:
An Empirical Evaluation of University Probationary Periods

Senior Honors Thesis

Presented in Partial Fulfillment of the Requirements for graduation with distinction in Economics in the undergraduate colleges of The Ohio State University

by

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I. Introduction

In 1993, the United States passed the Family and Medical Leave Act. This policy was designed to provide twelve weeks of unpaid parental leave to parents of newborns. Since then, there have been numerous studies on the effects and usage of this policy but none has been done on the effects in academia. This paper will examine the effects of this policy at The Ohio State University by analyzing probationary period lengths of tenured faculty before and after the policy was enacted. Instead of offering unpaid parental leave, Ohio State will extend the probationary period one year for the birth of a child. Thus, by looking at the lengths of probationary periods, it is possible to see if faculty utilized the extension and took longer than six years. The extension was made to help women who have children while trying to obtain tenure but to ensure gender equity, it is available to men as well. Therefore, this paper evaluates the differences of lengths and distributions between genders to ascertain the usage of the policy.

II. Family and Medical Leave Act

Effective February 5, 1993, the Family and Medical Leave Act (FMLA) was enacted to grant family leave under certain circumstances. These circumstances include the birth or adoption of a new child, a spouse or child's sickness or the employee's sickness. If the employee meets the requirements, they are allowed up to 12 weeks of unpaid leave. For the case of a new child, both mothers and fathers are eligible to take the leave. Upon return, there must be the same job or one comparable to the one they left. There has been some research on the usage of this leave for new mothers and fathers and it has been shown that fathers rarely take advantage of this option. Since, in general,

men get paid more than women and therefore their opportunity cost is greater, this makes sense. It is less costly to have the wife take the unpaid leave in this case.

However, the policy in academia is slightly different. Under normal conditions, an assistant professor can take six years to prove themselves worthy of tenure. With the birth of a child, a faculty member, male or female, can get a year extension to compensate for their time caring for the newborn. They can choose to exercise this option up to two times. Thus, they can take a maximum of eight years to obtain tenure. By looking at lengths for males and females, we can analyze the usage of the policy. By looking at lengths before the policy and after the policy, we can determine any changes that occurred.

In search of gender equity, family leave policies with regard to the tenure clock are typically gender neutral, offering the same benefit to males and females in response to the production of a child. But this neutrality contrasts sharply with the actual burdens incurred in child rearing. Many scholars have documented the disparate time burdens borne by fathers and mothers. Hamermesh, for one, studies the labor-leisure decisions of married couples, finding that they tend to time their leisure activities to coincide. The birth of a child changes the relationship in a very significant way:

> The birth of a child is accompanied by the household's rational adjustments in the partners' work/leisure schedules, changes that reflect the opportunity costs of their time. A new child, and the presence of children, has different effects on the work/leisure schedules of the husband and wife. A first birth leads mothers to alter their work schedules more than do other women, while fathers change their schedules less than their wives. Subsequent births, however, have similar effects on both

fathers and mothers. Taken together, the results demonstrate the existence of an additional cost of having children, one that, like most of the other costs, is borne disproportionately by mothers.[1]

If we accept that the burden of raising a child, especially a young child is disproportionately borne by women, then a benefit that is supposed to offset this cost that is offered equally to both men and women will, in turn, disproportionately benefit males. A female assistant professor with a newborn child can be expected to devote significant time and effort to raising that child. The cost to a male assistant professor is likely to be considerably less. Therefore, if the benefit to stretching the tenure clock by one year is equal for males and females, the net benefit, allowing for the additional cost to a female of childcare activities will be lower. Hence one would expect that any lengthening of the tenure clock associated with this benefit could be greater for males than for females.

It will appear below that changes in university rules and practices are leading to more stringent enforcement of the six year maximum probationary period than in the past. We will see that measures of central tendency for time to promotion and tenure are dropping for both males and females. Hence any increase in the probationary period made possible by the family leave policy is more than offset by other factors. With a fixed clock and a substantial opportunity cost of a child, it may be that female assistant professors are increasingly deferring fertility until after the tenure and promotion decision. If so, the family leave additional year benefit on the tenure clock may be even more advantageous, comparatively, for males than for females.

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[1] Daniel Hamermesh, "Togetherness: Spouses' Synchronous Leisure, and the Impact of Children." NBER Working Paper No. 7455, 2000. p. 25.

On balance, these factors suggest that the net effect of the application of the family leave policy in a nominally gender-neutral fashion may in practice turn out to be substantially more valuable to males than to females. One way to test for this effect is to compare time-to-tenure for successful male and female applicants before and after the imposition of the program.

III. Data

The data employed here consist of a compilation of the faculty members at The Ohio State University. The data were supplied by the Office of Academic Affairs at The Ohio State University. The spreadsheet provided by OAA contains information on all the faculty at the Ohio State University, including department hired into, gender, date of hire, hired rank, date of tenure, current status, current rank and date the individual left the university, if applicable.

Using the department information, it was possible to create a college variable. This variable separates professors into the faculty members who were hired into the College of Arts and Sciences and the faculty members who were hired outside of the College of Arts and Sciences. Many faculty in the College of Medicine and College of Veterinary Medicine as well as a few other colleges are not subject to a strict tenure timeline. Thus, the concept of a probationary period is not applicable in their situation. Therefore, using their data will cause the estimate of probationary period lengths to be longer than the actual. By splitting the faculty into the College of Arts and Sciences and other colleges, I was able to weed out the faculty that would skew the data.

By taking the difference between date of tenure and date of hire, the variable probyears2 was created to show the number of years it took a faculty member to obtain

tenure. It was this variable that was used to determine average probationary period lengths as well as the distribution of time towards tenure.

A dummy variable, policy, was created to split the faculty members into two groups based on the date of hire. If the faculty member was hired before September 1, 1993, the policy is 0. If the faculty member was hired after September 1, 1993, the policy variable is 1. By analyzing the lengths of the probationary period before and after the policy was enacted, we can look to see what effects the extension policy has had. However, we do not know the exact date of implementation of the policy. Thus, the break at September 1, 1993 only gives an estimate of the actual effects. To get a better idea, I created a second dummy variable, policy94, to look at September 1, 1994 as the time of enactment of the policy. Lastly, a third dummy variable, policy95, was created to look at the effects if the implementation of the policy did not occur until September 1, 1995.

An ontime variable was created to determine the percentage of assistant professors who obtained tenure without utilizing an extension, and therefore taking only six years. If a faculty member received tenure within six years, they received tenure on time. If a faculty member received tenure after the six year deadline, then they were not on time. Faculty were split by the policy dummy variable for analysis.

IV. Data Analysis

The software system SAS was used to analyze the data. I first calculated the mean of the probationary period for males and females to get a rough idea of what was occurring. To get an idea of the effect of the FMLA policy at Ohio State, faculty members were split into groups by gender and the policy dummy variable.

Several different policy break points were investigated through changes in the policy dummy variable. While the FMLA was enacted in 1993, the University's own policy was enacted separately, likely later, so that the effects of the policy may have been delayed. Hence comparisons were made for two later years as break points.

A proc frequency statement was used in SAS to determine the percentages of faculty members receiving tenure within six years. Once again, to assess the effects of the policy, faculty were split into the same groups as above.

To get a better idea of what was going on, distributions were enacted. This gives a breakdown of the number of years that was taken to receive tenure. Once again, distributions were analyzed by gender and policy.

V. Results

Below are tables showing the mean length of the probationary period for female and male professors. Lengths were analyzed for assistant professors hired before 1993 and after 1993, but then also analyzed using 1994 and 1995 as the year of the policy change.

Average Probationary Periods: College of Arts and Sciences				
	Before 1993	Std. Dev.	After 1993	Std. Dev.
Males	5.14	1.62	5.19	1.38
Females	5.95	1.29	5.55	1.32

Average Probationary Periods: Other Colleges				
	Before 1993	Std. Dev.	After 1993	Std. Dev.
Males	5.68	1.67	5.28	1.18
Females	6.37	1.39	5.55	1.28

As can be seen, female faculty in the College of Arts and Sciences decreased their length of the probationary period from 5.95 years before the policy was enacted to 5.55 years. There was also a decrease in length for both male and female faculty hired in non Arts and Sciences colleges. However, for male faculty members hired in the College of Arts and Sciences, there was a slight increase. The average number of years to obtain tenure increased from 5.14 years to 5.19 years.

There are several possible reasons why the average length increased for males hired in departments of the College of Arts and Sciences. One explanation could be that more males are utilizing the extension policy now offered to them when they have a newborn child. Another possible explanation could be that the same number of males are finishing in six years but they are taking closer to the full six years than before. With less assistant professors taking only one, two or three years to obtain tenure, the average length of the probationary period would increase, even though the same number of males are getting tenure within the allotted six years. Looking at the percentage of faculty members obtaining tenure on time will give us the most likely explanation of what is occurring.

Faculty Receiving Tenure on Time: College of Arts and Sciences (%)		
	Before 1993	After 1993
Males	66.49	69.67
Females	51.67	64.58

Faculty Receiving Tenure on Time: Other Colleges (%)		
	Before 1993	After 1993
Males	59.18	73.53
Females	34.1	66.67

By offering an extension of the probationary period to faculty, Ohio State is trying to make it easier for faculty members, especially women, to work and raise a family. To ensure that the policy is promoting gender equality, the offer was extended to male assistant professors. However, after the extension option was made available, more male and female professors were actually obtaining tenure within the allotted six years. It seems that although the policy was in effect, less faculty members were actually exercising their right to take a year extension.

Another interesting thing to note about these percentages is the significant increase for females outside of the College of Arts and Sciences. More research needs to be done to determine two things: one, why the percentage was at 34.10% before 1993 and two, why it increased so dramatically after 1993.

Overall, there is convergence among the male and female faculty, both in the College of Arts and Sciences and in the other colleges. Male faculty members increased their percentages to 69.67 percent and 73.53 percent and female faculty increased theirs

to 64.58 percent and 66.67 percent. The difference between males and female faculty is much less after 1993 than it was before.

The average lengths of the probationary period above were calculated using 1993 as the year the policy went into effect. The same analysis was done using 1994 and 1995 as beak points.

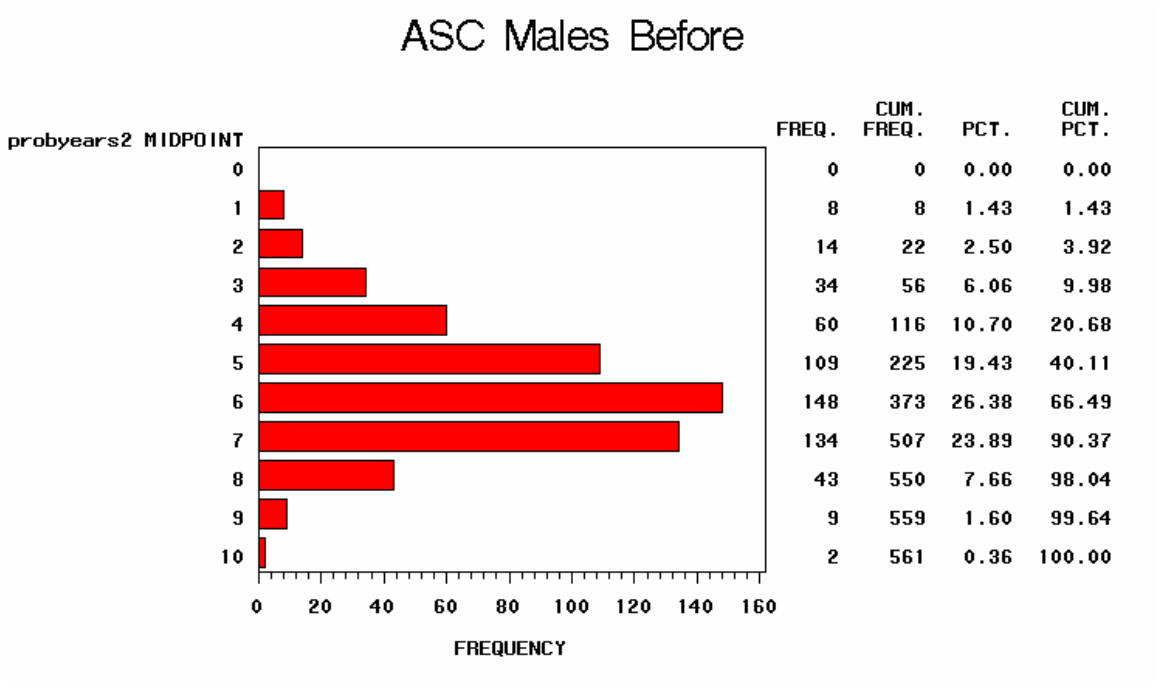
Faculty Receiving Tenure on Time: College of Arts and Sciences (%)				
	Before 1994	After 1994	Before 1995	After 1995
Males	67.36	65.38	66.84	68.54
Females	52.94	60.98	51.03	73.53

Faculty Receiving Tenure on Time: Other Colleges (%)				
	Before 1994	After 1994	Before 1995	After 1995
Males	59.07	74.8	59.38	74.34
Females	34.65	67.53	35.41	70.97

A similar story is told using 1994 and 1995 as the break years The percentages fluctuate slightly, but for the most part resemble the percentages when 1993 was used as the effective year of the policy. However, the one group where this does not occur is for females hired into the College of Arts and Sciences. Using 1993 as the break point, the percentage of women who received tenure on time is 64.58 percent. Using 1994, the percentage is 60.98 percent, which is not extremely close to the first estimate but it is not extremely far. However, the estimate using 1995 is a clear nine percentage points increase from 1993 and thirteen percentage points increase from 1994. If the extension policy did have an effect on probationary period lengths, the most pronounced effect would be among this group of faculty members. The policy is actually having an

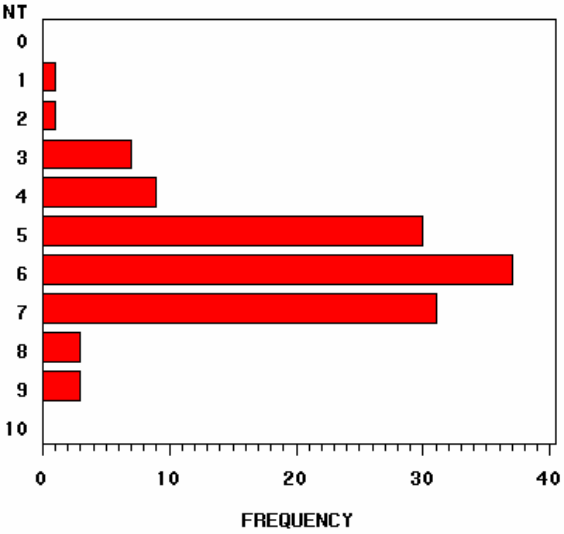
opposite effect than what it was intended for. The policy was created to make the tenure period slightly easier by providing a year extension for a woman who also had a newborn. However, based on the percentages above, more women are choosing not to take the extension and are receiving tenure on time. The policy is affecting the least the very group it was designed to help the most.

A look at the distribution of the probationary period lengths will give us a more detailed look at what is occurring.



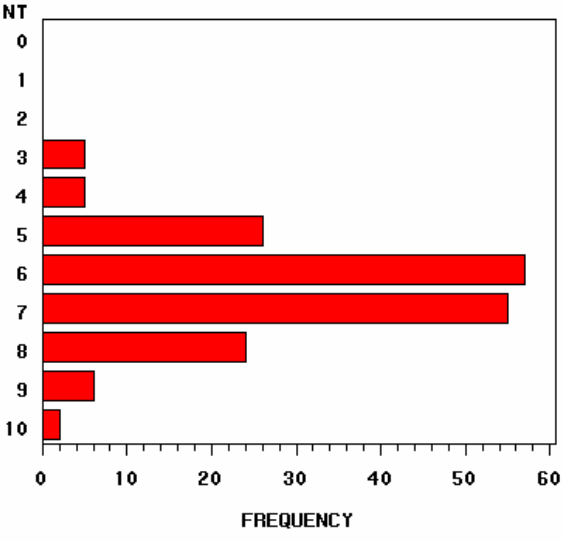
probyears2 MIDPOINT	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
0	0	0	0.00	0.00
1	8	8	1.43	1.43
2	14	22	2.50	3.92
3	34	56	6.06	9.98
4	60	116	10.70	20.68
5	109	225	19.43	40.11
6	148	373	26.38	66.49
7	134	507	23.89	90.37
8	43	550	7.66	98.04
9	9	559	1.60	99.64
10	2	561	0.36	100.00

ASC Males After

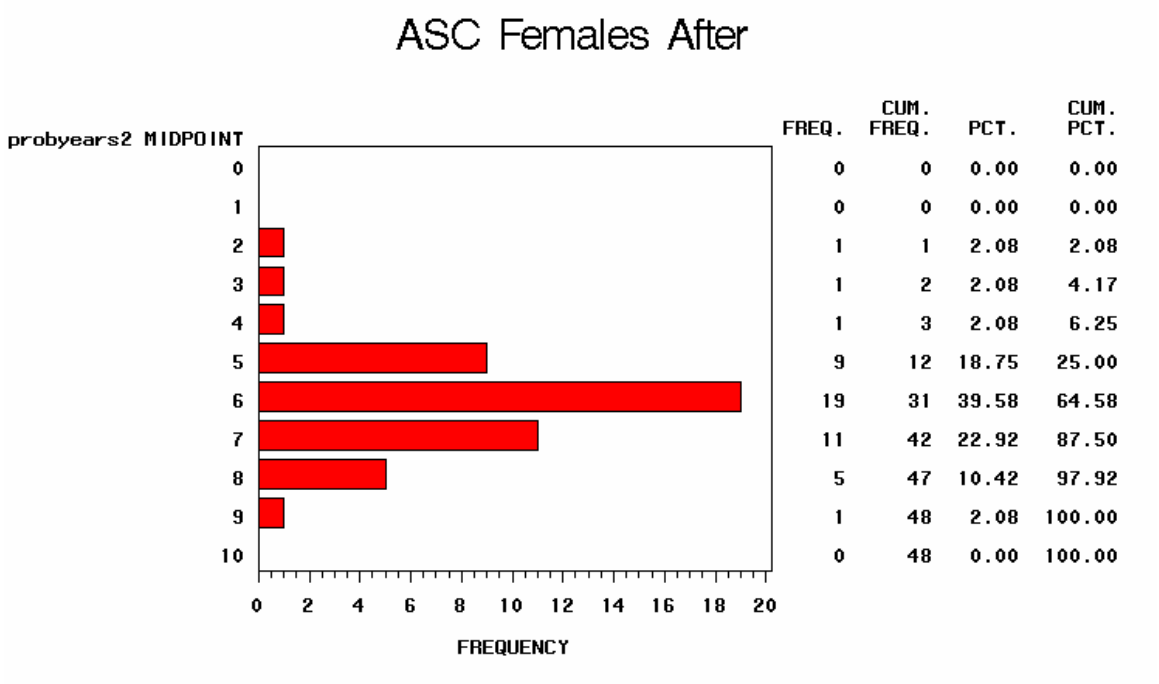


probyears2 MIDPOINT	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
0	0	0	0.00	0.00
1	1	1	0.82	0.82
2	1	2	0.82	1.64
3	7	9	5.74	7.38
4	9	18	7.38	14.75
5	30	48	24.59	39.34
6	37	85	30.33	69.67
7	31	116	25.41	95.08
8	3	119	2.46	97.54
9	3	122	2.46	100.00
10	0	122	0.00	100.00

ASC Females Before

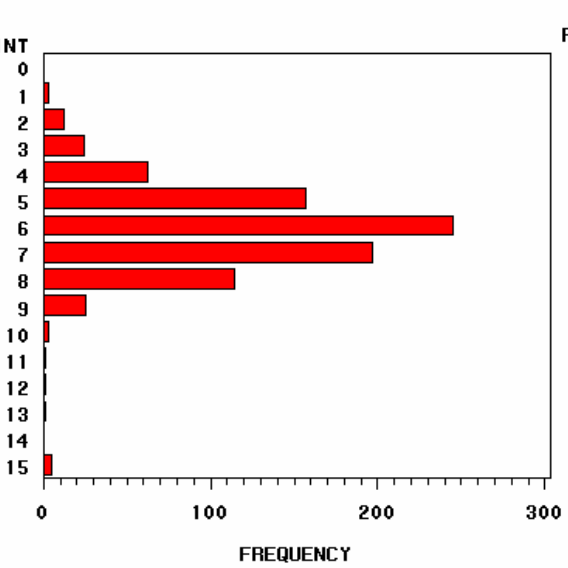


probyears2 MIDPOINT	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
0	0	0	0.00	0.00
1	0	0	0.00	0.00
2	0	0	0.00	0.00
3	5	5	2.78	2.78
4	5	10	2.78	5.56
5	26	36	14.44	20.00
6	57	93	31.67	51.67
7	55	148	30.56	82.22
8	24	172	13.33	95.56
9	6	178	3.33	98.89
10	2	180	1.11	100.00



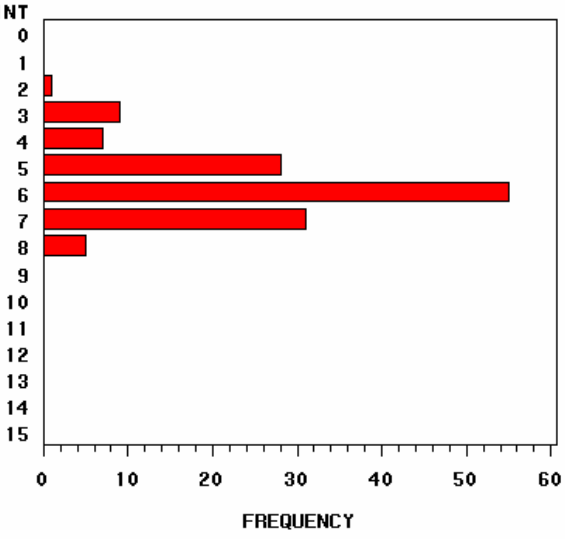
One thing that stands out about the distributions is the volume of male faculty members who finished their tenure time within two or three years. For the males hired before September 1993, 6.06 percent of the male faculty received tenure within three years and 10.70 were within four years. For faculty hired after September 1, 1993, it decreased to 5.74 percent and 7.38 percent respectively. After 1993, more male faculty members were taking the full six years to receive tenure. This is most likely the reason for the increase in average probationary period length from 5.14 to 5.19. One other interesting point shown in these distributions is that very few faculty members in the College of Arts and Sciences hired after September 3 went over eight years on their probationary period.

non ASC Males Before



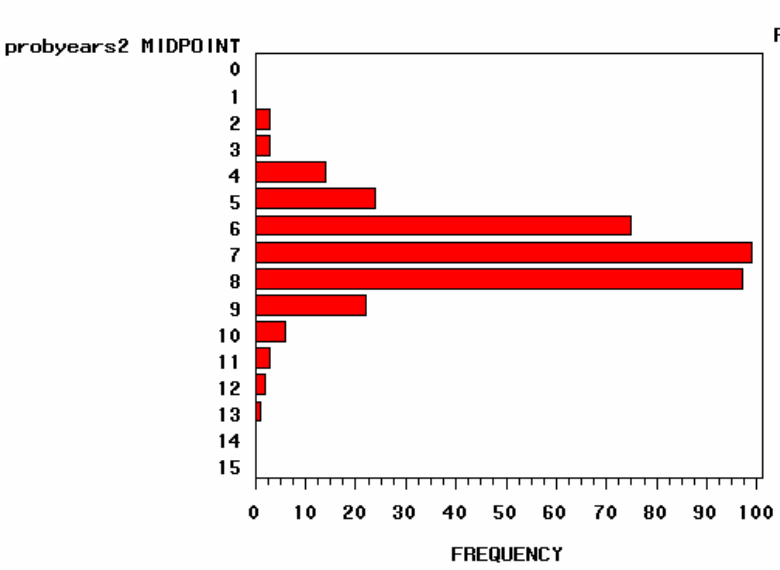
probyears2 MIDPOINT	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
0	0	0	0.00	0.00
1	3	3	0.35	0.35
2	12	15	1.41	1.76
3	24	39	2.82	4.59
4	62	101	7.29	11.88
5	157	258	18.47	30.35
6	245	503	28.82	59.18
7	197	700	23.18	82.35
8	114	814	13.41	95.76
9	25	839	2.94	98.71
10	3	842	0.35	99.06
11	1	843	0.12	99.18
12	1	844	0.12	99.29
13	1	845	0.12	99.41
14	0	845	0.00	99.41
15	5	850	0.59	100.00

non ASC Males After



probyears2 MIDPOINT	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
0	0	0	0.00	0.00
1	0	0	0.00	0.00
2	1	1	0.74	0.74
3	9	10	6.62	7.35
4	7	17	5.15	12.50
5	28	45	20.59	33.09
6	55	100	40.44	73.53
7	31	131	22.79	96.32
8	5	136	3.68	100.00
9	0	136	0.00	100.00
10	0	136	0.00	100.00
11	0	136	0.00	100.00
12	0	136	0.00	100.00
13	0	136	0.00	100.00
14	0	136	0.00	100.00
15	0	136	0.00	100.00

non ASC Females Before



probyears2 MIDPOINT	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
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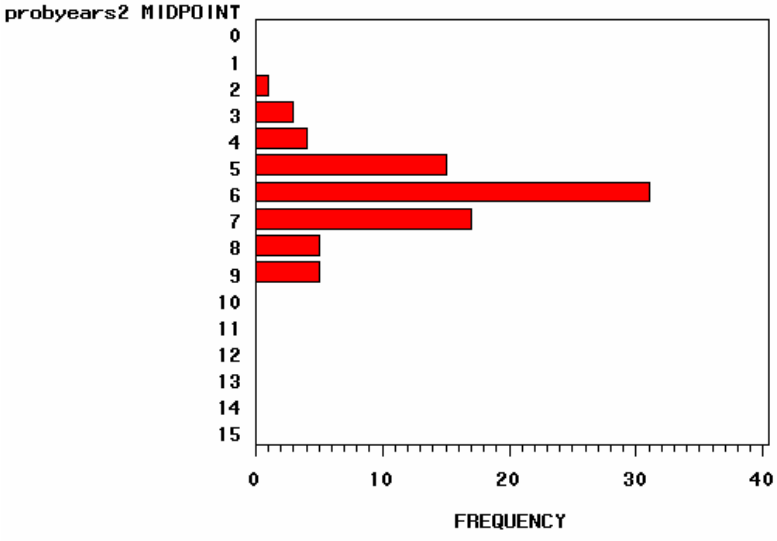
1	0	0	0.00	0.00
2	3	3	0.86	0.86
3	3	6	0.86	1.72
4	14	20	4.01	5.73
5	24	44	6.88	12.61
6	75	119	21.49	34.10
7	99	218	28.37	62.46
8	97	315	27.79	90.26
9	22	337	6.30	96.56
10	6	343	1.72	98.28
11	3	346	0.86	99.14
12	2	348	0.57	99.71
13	1	349	0.29	100.00
14	0	349	0.00	100.00
15	0	349	0.00	100.00

non ASC Females After



probyears2 MIDPOINT	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
0	0	0	0.00	0.00
1	0	0	0.00	0.00
2	1	1	1.23	1.23
3	3	4	3.70	4.94
4	4	8	4.94	9.88
5	15	23	18.52	28.40
6	31	54	38.27	66.67
7	17	71	20.99	87.65
8	5	76	6.17	93.83
9	5	81	6.17	100.00
10	0	81	0.00	100.00
11	0	81	0.00	100.00
12	0	81	0.00	100.00
13	0	81	0.00	100.00
14	0	81	0.00	100.00
15	0	81	0.00	100.00

For both males and females across all of the colleges, the percentage of faculty receiving tenure on time increased. Also, there were few faculty members hired after 1993 in all of the schools who went over eight years on their tenure track. The distributions suggest that even though there was a policy after 1993 to allow up to a two

year extension on the probationary period, few people actually utilized it. The university had made a formal policy to allow for extensions under certain circumstances. However, something else was occurring that discouraged faculty members from utilizing the extension when they had the chance.

There could be several explanations for this occurrence. One is that Ohio State administration is putting pressure on faculty to obtain tenure within the allotted six year timeframe. Thus, faculty respond more to the pressure to obtain tenure quickly than to the extension policy.

There could also be outside forces that are causing the decrease. One reason could be that families are waiting longer to have children. This could mean they are waiting until after obtaining tenure. Census data shows some support for this hypothesis; women with professional or graduate degrees are waiting on average until they are 35 to have their first child. This would be right around the age of obtaining tenure for most assistant professors.

Another reason could be that is has become more acceptable in our society to hire a nanny or take children to a daycare. With this option more acceptable and more available, faculty, especially female faculty, may not feel the need to use the option of an extension.

VI. Conclusion

To determine the effects of the Family and Medical Leave Act at The Ohio State University, I have done various tests to analyze probationary period lengths. First, I did a test of means for males and females in the College of the Arts and Sciences and males and females in the other colleges. This showed a decrease for all groups except males in

the College of Arts and Sciences. Here there was an increase, though not statistically significant.

Next, the percentages of female and male faculty receiving tenure on time were calculated. These showed, for all three policy estimates, that women and men actually decreased their probationary lengths after the policy was enacted. The percentages tables also showed that there is convergence among all groups of the faculty.

Finally, a distribution of the probationary period lengths were analyzed. This revealed that the percentage of faculty finishing in six years increased across all groups. Also, there was a significant number of females in non Arts and Sciences colleges who were taking seven years to finish before the policy was enacted. Afterwards, the percentage finishing on time nearly doubled for this group. A far less number of women were taking seven years after the policy.

We can not be sure of the exact reasons for this universal decrease but conjectures can be made for added pressure from the university to obtain tenure in six years. This could deter many from using the allowed extension. There could also be outside forces at work including more acceptability of daycare and nanny options or delaying having children until after receiving tenure.

What we do know for sure is that there is a universal decrease in the lengths of the probationary periods for assistant professors. This results in an increase in the percentage of faculty obtaining tenure within six years. We are seeing a convergence among males and females in all colleges in receiving tenure on time.

VII. Future Studies

Because of the limited data, the analysis given here is only an approximation of what is occurring. If more data were available, more detailed studies could be done to determine more precisely who, male or female faculty, is receiving most of the benefit of the extension policy. For example, if data were obtained which showed which faculty members had taken an extension on their probationary period due to a newborn or adopted child, the policy could be accurately analyzed to determine which gender was utilizing the policy the most and obtaining most of the net benefit.

If given data on marital status of the faculty and the number of children they have, a difference-in-difference study could be performed. The control group could be faculty members who are single with no children who have no need to extend their probationary period due to a new child. Therefore, using the control group, the true net effect of the policy could be determined.